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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,471	01/25/2001	Shinichi Minami	843.39542X00	3956

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EXAMINER

BAUMEISTER, BRADLEY W

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 03/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/768,471

Applicant(s)
Minami et al.

Examiner
B. William Baumeister

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2815



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Feb 11, 2002

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above, claim(s) 12-14 is/are withdrawn from consideration

5) ☐ Claim(s) _____ is/are allowed.

6) ☐ Claim(s) _____ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☒ Claims 1-11 and 15-23 are subject to restriction and/or election requirement

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

20) ☐ Other:

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DETAILED ACTION

Election/Restriction

1. Applicant's election without traverse of species I in Paper No. 8 is acknowledged.
However, this application has been reassigned and a review of the prosecution history by the new examiner indicates that the last restriction requirement (paper #7) mailed 1/9/2002 possessed some errors. As such, that restriction is withdrawn and replaced with the following restriction.
2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-3, 15-18 and 22, drawn to a Zener diode, classified in class 257, subclass 605.
 - IA. Claims 1-3 and 22, drawn to the Zener diode of invention I wherein the contact holes are formed at the type-II conductivity region periphery.
 - IB. Claims 15-18, drawn to the Zener diode of invention I wherein the contact holes are formed above the type-I conductivity region.
 - II. Claim 11, drawn to contact hole arrays having particular pitch relationships and sizes, classified in class 257, subclass 773.
 - III. Claims 4-10 and 23, drawn to a Zener diode having contact hole arrays of particular pitches, classified in class 257, subclass 603.
 - IV. Claims 19-21, drawn to a bipolar transistor having contact hole arrays of particular pitch relationships, classified in class 257, subclass 565.

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3. The inventions are distinct, each from the other because of the following reasons:

a. Inventions IA and IB are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention IA has separate utility such as for a Zener diode wherein contact is made only to the periphery, as depicted in FIG 3. See MPEP § 806.05(d).

b. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as being alternatively employed in a bipolar transistor. See MPEP § 806.05(d).

c. Inventions III and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because various combination claims (e.g. claim 4) do not require the type-II region to have a greater junction depth (claim 3) nor that the contact holes be formed at the periphery (claim 2). The subcombination has separate utility such as in a Zener diode that employs contact holes in other regions having the same, larger pitch as that of the type II region.

d. Inventions I and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be

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separately usable. In the instant case, invention IV has separate utility such as in a circuit that does not require Zener diode protection. See MPEP § 806.05(d).

e. Inventions III and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because claim 11 further requires that the pitch of the second region be substantially the same as the pitch of other portions of the circuit. The subcombination has separate utility such as for a contact layout for a bipolar transistor.

f. Inventions IV and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because claim 11 further requires that the pitch of the second region be substantially the same as the pitch of other portions of the circuit. The subcombination has separate utility such as for a contact layout for a Zener diode.

g. Inventions III and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be

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separately usable. In the instant case, invention IV has separate utility such as in a circuit not requiring Zener diode protection. See MPEP § 806.05(d).

4. Because these inventions are distinct for the reasons given above, the inventions have acquired a separate status in the art because of their recognized divergent subject matter as shown by their different classification, the search required for any one invention is not required for the other inventions, and/or separate examination would be required, restriction for examination purposes as indicated is proper.

5. A telephone call was made to Mr. Larry Anagnos on 3/18/2002 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

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Conclusion

7. For the sake of compact prosecution, the examiner now points out the following concerns that were noted during the review of the application which may lead to objections or rejections upon subsequent prosecution on the merits. Applicant is invited to take this opportunity to review the specification and claims and correct these and any other errors.

- a. Claims 5-7 recite that the pitch is 2 (or 3 or 4) times and [sic: or] more than another pitch.
- b. Claim 8 recites that the pitch is greater than another maximum [sic: minimum?] pitch.
- c. Claim 10 states that the holes are equal to and [sic: or] smaller.
- d. Claim 11 recites second connection holes for electrically connection [sic: connecting] a second wire... so that a pitch between adjacent second connection holes [sic: is] substantially equal to the minimum pitch...
- e. Claim 19 recites a first contact hole... at said upper part of said first semiconductor substrate [sic: region]

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INFORMATION ON HOW TO CONTACT THE USPTO

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner, **B. William Baumeister**, at **(703) 306-9165**. The examiner can normally be reached Monday through Friday, 8:30 a.m. to 5:00 p.m. If the Examiner is not available, the Examiner's supervisor, Mr. Eddie Lee, can be reached at (703) 308-1690. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read "B. William Baumeister". The signature is stylized with a large, sweeping "A" at the end.

B. William Baumeister

Patent Examiner, Art Unit 2815

March 18, 2002